

ABSTRACT OF THE DISCLOSURE

An oxidation reactor includes a reactor body, a manhole nozzle projecting from the reactor body, and a partition plate separating an inside of the manhole nozzle and an inside of the reactor body from each other. In an oxidation reactor including the reactor body and a nozzle projecting from the reactor body, there is provided a means for feeding an inert gas into the nozzle. In a process for producing (meth)acrylic acids by subjecting propane, propylene or isobutylene to catalytic gas-phase oxidation reaction in an oxidation reactor for producing (meth)acrolein or (meth)acrylic acid, the above oxidation reactor is used as the oxidation reactor. In a method for analyzing an easily-polymerizable compound by introducing a gas containing the easily-polymerizable compound into an analyzing apparatus through a sampling tube, a double tube is used as the sampling tube, and a heating medium is fed into an outer tube of the double tube. According to these methods, the oxidation reaction can be stably conducted, and the reaction product gas can be prevented from being condensed and polymerized in the sampling tube, so that an on-line analysis can be performed at a high accuracy for a long period of time.